UN environment programme

switchafrica GREEN

Funded by the European Union

Country: Uganda
Sector: Manufacturing
Project: Demand-side management of energy use in micro, small and medium sized enterprises (MSMEs) in Uganda through promotion of energy efficiency techniques and practices.
Grantee: Ministry of Trade, Industry and Co-operatives
Partner: Uganda Cleaner Production Centre (UCPC)

The SWITCH Africa Green programme was developed by the European Commission to support African countries in their transition to an inclusive green economy, the main objective being to promote sustainable development. This is based on sustainable consumption and production (SCP) patterns, while generating growth, creating decent jobs and reducing poverty.

This impact sheet on 'Demand-side Management of energy use in micro, small and medium-sized enterprises (MSMEs) in Uganda through promotion of energy efficiency techniques and practices' provides a snapshot of results and achievements of the project under the Green Business Development Component of Phase I (2014-2019) of the SWITCH Africa Green programme. This component supported MSMEs in applying and adopting SCP practices within their business operations.

Acknowledgements

The project was implemented by the Ministry of Trade, Industry and Co-operatives, Uganda in partnership with Uganda Cleaner Production Centre (UCPC), with the support of the SWITCH Africa Green National Focal Point Dr. Tom Okurut, National Environment Management Authority (NEMA), Uganda and National Coordinator Twine Teddy Nsubuga, United Nations Development Programme (UNDP), Uganda. The grants were managed by the United Nations Office for Project Services (UNOPS) and coordinated by Celia Marquez with support from Mercy Gatobu.

Supervision and coordination for development of the impact sheet was carried out by Rhoda Wachira and Patrick Mwesigye and programme support was provided by Carolyne Kilel and Sylvia Munuhe, Africa Office, United Nations Environment Programme (UNEP).

The impact sheet was compiled by Sheila Karue, consultant, UNEP. Editing, layout and design was coordinated by the communication division, UNEP.

UNEP is grateful for the financial support provided by the European Union (EU) for implementation of the SWITCH Africa Green programme.

BACKGROUND

This SWITCH Africa Green supported project was implemented by the Ministry of Trade, Industry and Cooperatives (MTIC) in partnership with UCPC. The project was aligned with Uganda's Vision 2040 and the National Development Plan II, specifically as the country is aiming at attaining rapid industrialization and economic growth.

The main challenges experienced by MSMEs in the management of energy include high dependence on fossil fuels; behavioural patterns, such as leaving lights on even in workspaces that receive natural lighting; and use of old technologies that consume high energy. The project identified strategies that manufacturers can pursue to efficiently manage resources, mainly energy. Along with adopting existing technologies and approaches, MSMEs were encouraged to invest in acquiring energy efficient technologies. This would improve energy productivity and increase sustainability.

OBJECTIVES

- To improve energy productivity of MSMEs in the manufacturing sector through adopting energy efficient techniques and practices, thereby reducing negative effects on the environment
- To create awareness about energy management and conservation among MSMEs
- To create model MSMEs in the sector by facilitating use of sustainable energy efficient techniques and practices.

BENEFICIARIES

The project engaged MSMEs involved in the following sectors: tea processing, leather tanneries, dairy processing plants, textile manufacturers, metal fabricators, fruits and beverages, oil and fats processing.

OUTPUTS

Contribution and inputs to ministerial policy statements

The Ministry of Trade, Industry and Co-operatives included project activities and achievements in the ministerial policy statements for financial years 2016/17 and 2017/18.

Ministry of Trade, Industry and Co-operatives included project activities and achievements in the ministerial policy statements for financial years 2016/17 and 2017/18.

Increased networking among green businesses

Associations were created with other SWITCH Africa Green supported projects including 'Demand-side management of

water use in MSMEs'. Efficient water use complements energy conservation, such as energy for pumping water and heat loss associated with condensate losses.

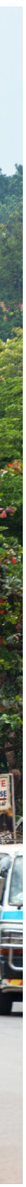
Beneficiary MSMEs participated in the seventh Annual Trade Sector Review Conference in Kampala (2018) and SWITCH Africa Green networking fora (2016 and 2018) during which they had opportunities to connect with other green businesses.

Improved capacities of workers in green sectors

Detailed energy audits were conducted in 24 MSMEs to assess and identify potential measures for energy efficiency and conservation that could result in sustainable energy cost savings.

Key technical staff in 23 MSMEs were trained on energy efficiency measures in their respective operations. The MSMEs were assisted with creating energy efficient policies, programmes, strategies and implementation plans.

Beneficiary MSMEs participated in the seventh Annual Trade Sector Review Conference in Kampala (2018) and SWITCH Africa Green networking fora (2016 and 2018) during which they had opportunities to connect with other green businesses.



Detailed energy audits were conducted in 24 MSMEs to assess and identify potential measures for energy efficiency and conservation that could result in sustainable energy cost savings.

Key technical staff in 23 MSMEs were trained on energy efficiency measures

Improved awareness among stakeholders on energy efficiency

Through the project, three regional awareness-raising and training workshops were held, attracting participation of over 160 people and included more than 43 MSMEs and government representatives.

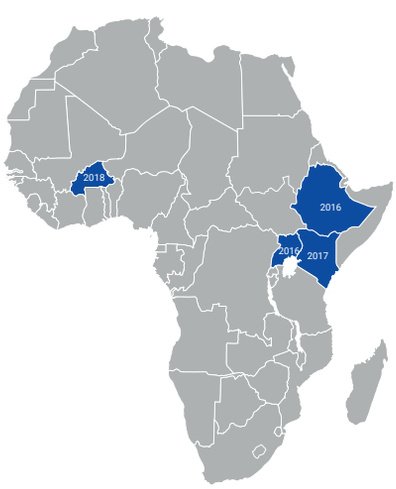
OUTCOMES

Uptake of SCP practices by the MSMEs

Following training the MSMEs implemented SCP measures to improve their energy consumption. Some of the measures implemented included: using more energy efficient machines and equipment, replacing high energy consuming light bulbs with LED and installing translucent sheets in some workspaces to allow penetration of natural lighting.

Firm-specific sustainability standards certification

One of the enterprises, Kayonza Growers Tea Factory, obtained fair trade certification. Their certified products met the criteria set by fair trade standards which ensure terms of trade, protect workers' rights, and provide the framework for producers to build thriving enterprises.



eudevdays.eu

Amount of savings generated from improved energy efficiency

Technical evaluations carried out showed that five of the enterprises reduced costs by USD 204,000 through energy savings of 11,351.60MW per annum and greenhouse gas emission reduction of 9893.105 tons CO_2-eq.

...investments amounting to USD1,760,610 from six of the MSMEs were used to implement

energy efficient measures. It was projected that the enterprises would recover their investments within two and a half years.

Green investments in the MSMEs

Following project implementation, investments amounting to USD1,760,610 from six of the MSMEs were used to implement energy efficient measures. It was projected that the enterprises would recover their investments within two and a half years.

IMPACTS

Environmental Impacts

Savings from enhanced energy productivity

The enterprises implementing energy efficiency measures experienced an improvement in energy productivity. For example, in one of the tea factories, energy productivity improved by about 17.6 per cent from 7.4kg/kW in 2014 to 8.7kg/kW in 2017.

Reduction in greenhouse gas emissions

The total reduction in greenhouse gas emission was 9,893.105 tons of CO_2-eq, this represented a 9 per cent reduction in greenhouse gas emissions associated with energy use in the MSMEs.

Social impacts

Reduction in contamination of produce

In one of the MSMEs, the company established a mobile laboratory for farmers which reduced levels of aflatoxin from 60 per cent to 10 per cent. Less of the produce was rejected which translated to increased sales revenues.

Improved working conditions

Good housekeeping and hygiene practices were introduced in some of the enterprises. Increased savings also enabled the workers to be paid their salaries on time. There was an improvement in occupational health and safety practices, with workers using protective equipment such as boots, overcoats, gloves and masks. This resulted in reduced visits to the hospitals by the workers.

LESSONS LEARNT

- Saving energy requires considering other factors such as monitoring processes, control parameters (volumetric flow rates, temperatures and pressure), hygiene and water use
- Commitment from top management, organization structure and culture play a significant role in adopting energy efficiency and savings measures in business operations
- Implementing simpler processes with lower costs assists in making a case for investment into more capital-intensive energy efficiency measures

“Before we became cleaner and greener, we were using the 3-stone boiler system – “the Grandmother System”; losing a lot of firewood because it was not completely burning. But with SWITCH Africa Green, MTIC-UCPC advised us on an energy efficient system that fully burns the wood and also improved our working environment”.

Owner,
Aloesha Organic Natural Health Products Limited

www.unep.org/switchafricagreen

UN environment programme

switchafrica GREEN

UNDP
Empowered lives. Resilient nations.

UNOPS

Funded by the European Union

Contact us:
E:mail: info.switchafricagreen@un.org.

Photo credits : UNEP|SWITCH Africa Green